

TWO NEW SPECIES OF ISOPOD CRUSTACEANS BELONGING TO AUSTRALIAN ENDEMIC GENERA (SEROLIDAE AND CHAETILIIDAE)

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Abstract

Poore, G.C.B., 1990. Two new species of isopod crustaceans belong to Australian endemic genera (Serolidae and Chaetiliidae). *Memoirs of the Museum of Victoria* 51: 99–107.

Basserolis franklinae sp. nov. (Serolidae) from the south-eastern Australian shelf edge and *Stegidotea latipoda* sp. nov. (Chaetiliidae) from the North-west shelf are described, being respectively the second and third species described in genera known only in Australia.

Introduction

Among Australia's endemic genera of Crustacea two genera of Isopoda have been until now known by only one (Serolidae, *Basserolis* Poore, 1985a) and two species (Chaetiliidae, *Stegidotea* Poore, 1985b). In this short contribution an additional species is described for each genus. One comes from the edge of the continental shelf in south-eastern Australia and the other from the North-west shelf.

Material is in the Museum of Victoria, Melbourne (NMV) and Australian Museum, Sydney (AM).

Serolidae Dana

Basserolis franklinae sp. nov.

Figures 1–2

Material examined. Holotype, male, 1.7 mm. Victoria, south of Point Hicks (38°14.80'S, 149°9.30'E), 200 m, coarse sand and gravel, WHOI epibenthic sled, M.F. Gomon et al. on RV Franklin, 24 Jul 1986 (stn SLOPE 41), NMV J17642 (with 3 slides).

Paratypes. Type locality, NMV J17643 (1 male, 4 slides), J17644 (10 specimens), AM P40047 (4 specimens).

Diagnosis. Male. Body outline roughly pyriform, about 1.2 times as long as wide, widest at pereonite 1 and tapering to about two-thirds maximum width at pleotelson. Head as long as pereonite 1, together one-third total length. All margins of pereonites, pleon, antennal peduncles and uropods finely serrate. Sutures between the dorsal coxal plates and tergites of pereonites 2–6 weakly visible; coxae 2–6 obliquely truncate. Pleotelson 1.7 times as wide as long, posteriorly broadly rounded, with 2 minute denticles at apex.

Antennae 1 and 2 of very similar proportions, setation and aesthetasc arrangement as *B. kimblae*. Mouthparts identical to those of *B. kimblae* except mandibular palp article 3 with 4 apical setae (3 in *B. kimblae*).

Pereopod 1 with same proportions and setation as *B. kimblae* but palmar spines longer and end of dactylus curved (straight in *B. kimblae*). Pereopods 2–7 and pleopods 1–5 with same proportions and setation as in *B. kimblae*.

Uropodal peduncle with subacute medial projection, lateral margin and apex of medial margin serrate; endopod exceeding peduncle, twice as long as wide, tapering to serrate apex; exopod about a half length of endopod.

Female. Unknown.

Etymology. Like *B. kimblae* this species is named for the vessel from which it was collected, in this case ORV "Franklin".

Distribution. South-eastern Australian shelf edge, 200 m (type locality only).

Remarks. The species is very similar to *Basserolis kimblae* Poore, 1985 but is easily recognised by its characteristic tapering shape (*B. kimblae* is more oval, has a proportionally larger pereonite 1 and lacks the marginal serration). The new species also differs in the form of pereopod 1 and the uropod. The uropodal endopod of *B. franklinae* is longer and narrower than in *B. kimblae*.

The new species confirms the generic diagnosis of *Basserolis*. Detailed similarities between the two species extend to setation of the mouthparts, antennae and pereopods. Closer examination of both species has shown that weak coxal sutures are visible on pereonites 2–6 in speci-

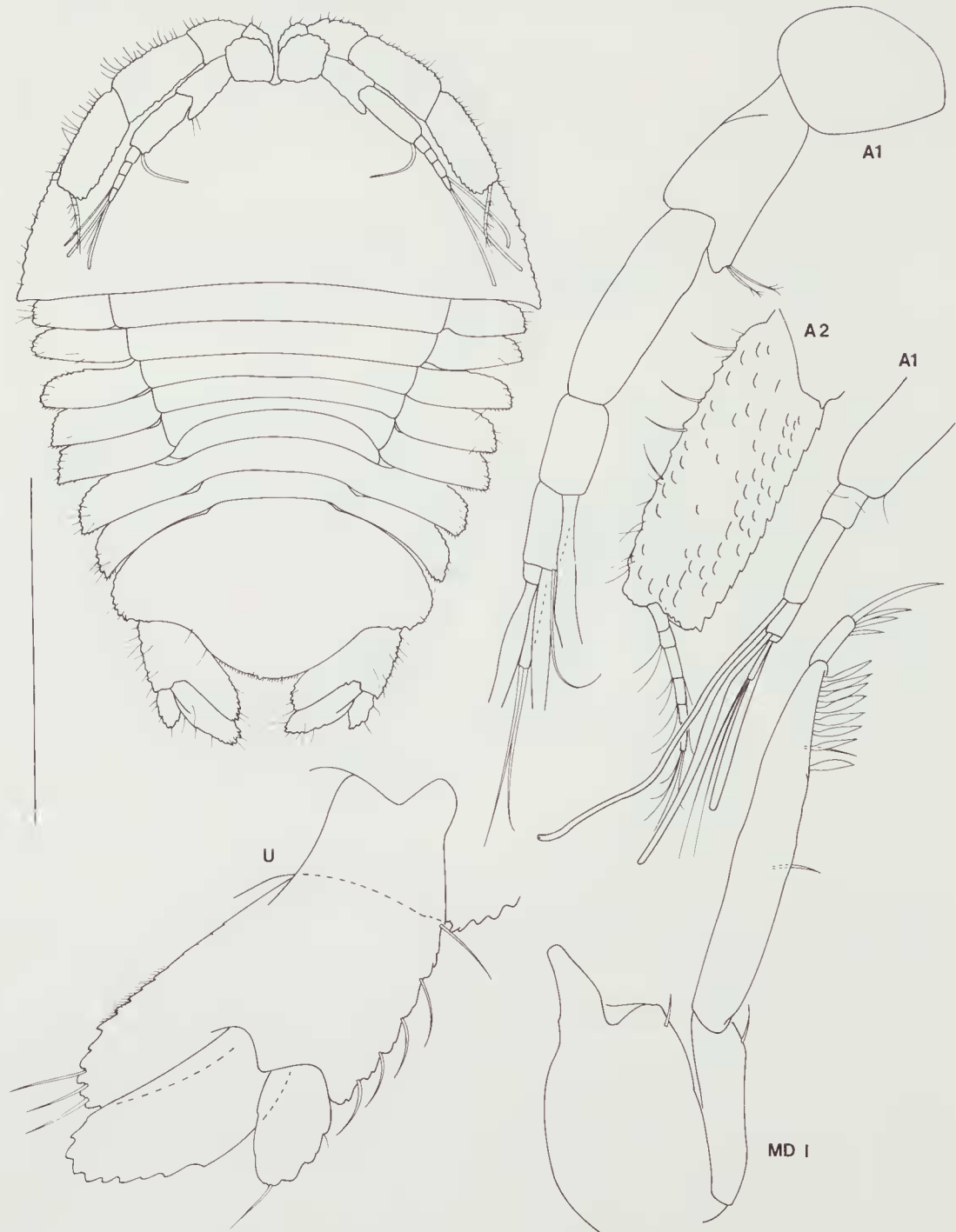


Figure 1. *Basserolis franklinae*, holotype. A1, A2, antenna 1 and 2; MDI, left mandible; U, left uropod, ventral; scale line = 1 mm.

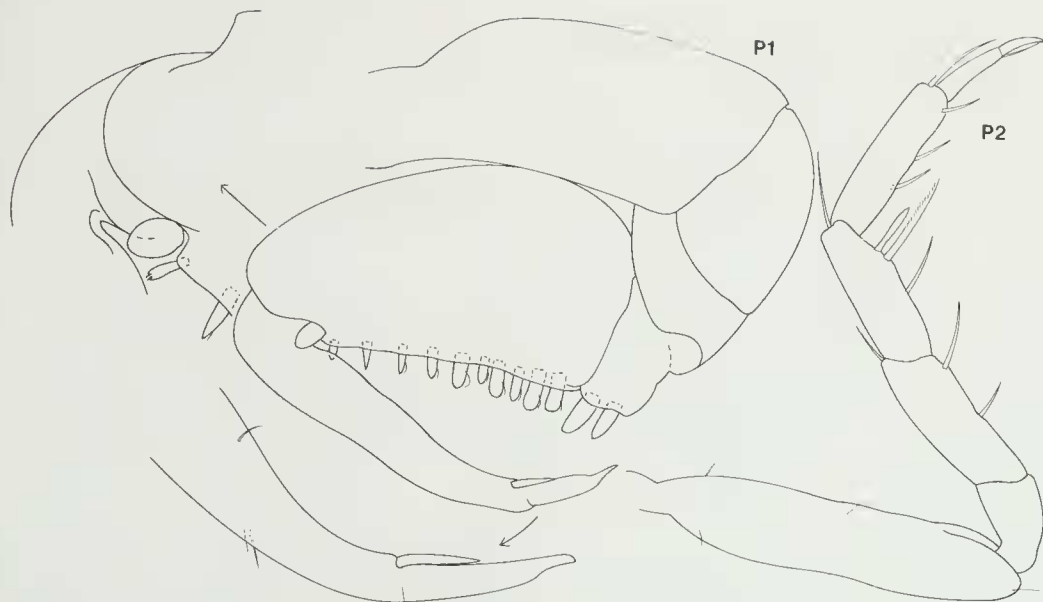


Figure 2. *Basserolis franklinae*, holotype. P1, P2, pereopod 1 and 2.

mens of both species, not only on pereonites 2–4 as shown for *B. kimblae*. This visibility of these sutures depends on preparation and lighting.

The mandible in figure 1 is shown at a different perspective from that of *B. kimblae* (Poore, 1985a; fig. 3a) but is similar in the two species. The distoventral step seen in the new figure accommodates the upper lip which protects the incisor (see Poore, 1985a; fig. 1a).

Both species are notable for the possession of a discoid seta mesio-distally on the palm of pereopod 1 and fitting into the base of the dactyl.

The new species was taken from a single station at 38°S at 200 metres depth during sampling programs which sampled more than 200 benthic stations between 37°S and 41°S and 16 m and 3150 m.

Basserolis kimblae Poore

Remarks. Recently collected material of *B. kimblae* extends its depth and latitudinal range beyond that known when it was described. It is now known from 3 specimens from c. 37°S at 520 m off New South Wales and 17 specimens from c. 40°S at 120 m off eastern Bass Strait. The only known occurrence of *B. franklinae* lies between these extremes.

Chaetiliidae Dana

Stegidotea Poore, 1985

Remarks. Only two genera of Chaetiliidae possess an antenna 2 with a flagellum composed of a major plus two minor articles, *Stegidotea* (with two species) and *Symmium* Richardson, 1904 (also with two species) (Poore, 1984, 1985b). The new species described here does not agree exactly with the current diagnoses of either.

Symmium is distinguished from *Stegidotea* by the possession of two elongate uropodal rami (short and unequal in *Stegidotea*), strongly lobed maxillipedal palp articles 4 and 5 (not lobed), and in pereopod 7 lacking an unguis (unguis well developed). The new species has none of these features characterising *Symmium* and is more similar to *Stegidotea* in general habitus, arrangement of dorsal sculpture, pereopods and uropods.

Differences between this species and the two previously known require restatement of three character states used by me to define *Stegidotea*:

1. Pleonites 1 and 2 are completely delimited dorsally, pleonite 3 completely or partially so.

2. Mandibular molar process is an untoothed boss or fully toothed and setose.

3. Maxillipedal palp with article 2 and 3 fused or free.

Key to Australian species of *Stegidotea*

1. Bases of pereopods 5–7 about half as wide as long and overlapping; dorsal sculpture obscure; antennae 1 and 2 of similar lengths . . . *S. latipoda*
- Bases of pereopods 5–7 linear and not overlapping; dorsally 3 rows of carinae; antenna 1 shorter than antenna 2 2
2. Pereon with mid-dorsal and midlateral rows of strong triangular carinae; pleonite 4 wider than remaining pleotelson; head only partly immersed in pereonite 1 *S. pinnata*
- Pereon with mid-dorsal and midlateral rows of weak carinae; pleonite 4 as wide as remaining pleotelson; head immersed between wider shoulders of pereonite 1 *S. scabra*

Stegidotea latipoda sp. nov.

Figures 3–6

Material examined. Holotype, female, 4.7 mm. Western Australia, North-west Shelf, between Dampier and Port Hedland (19°8.4'S, 119°2.4'E), 78 m. WHOI epibenthic sled, CSIRO, Division of Fisheries on RV Soela, 11 Dec 1982 (stn NWA 349), NMV J17664 (with 2 slides).

Description. Body almost 3 times as long as wide, dorsoventrally moderately convex; uropods dominate lateral view posteriorly. Integument with clear pattern of regular small pits all over. Head with a sinuous anterior margin; lateral margin of head rounded. Pereonites with obscure mid-dorsal ridge posteriorly, with obscure midlateral and lateral crests, more prominent posteriorly; pleon with only obscure dorsal bosses. Dorsal coxal plates rounded posteriorly. Pleon almost half total length; pleonite 1 short, narrower than pleonites 2 and 3, free; pleonites 2 and 3 free but not articulating, not laterally expanded; pleotelson tapering to sharply rounded apex.

Antenna 1 reaching to near lateral margin of head, about as long as antenna 2; articles of peduncle subequal in length; flagellum as long as last article of peduncle, its article 2 minute; flagellar articles with short apical aesthetascs. Antenna 2 peduncle article 3 with 1 strong distolateral seta, article 5 with 7 strong lateral setae; flagellum shorter and narrower than last article of peduncle, of 3 articles of decreasing lengths.

Mandible with toothed incisor; lacinia mobilis weakly developed, broader on left than on right; spine row of 2–3 short spines fused to lacinia mobilis; molar simple, untoothed. Max-

illa 1 with 2 setae on inner lobe, 10 uneven finely denticulate setae on outer lobe. Maxilla 2 with mesial plumose seta and 5 denticulate setae apically; middle and outer lobes with 9 and 8 falcate setae on oblique apices. Maxillipedal endite reaching two-thirds along fused articles 2 and 3 of palp, without coupling hooks, with 2 apical setae separated by a distal tooth plus 3 setae in oblique posterior row; palp ovate, articles 2 and 3 fused with mesial setae only, article 5 short.

Pereopods 1–3 similar in form and size. Pereopod 1 carpus posteriorly lobed with 2 posterodistal short setae; propodus with 2 proximal setae on palm; dactylus closes on carpus. Pereopods 2 and 3 similar, bases slightly wider than on pereopod 1. Pereopods 4–7 ambulatory; basis of 4 about 4 times as long as wide, of 7 about 2.5 times as long as wide; ischium with posterior lobe overlapping basis when closed; carpus with 1 and propodus with 2 posterior strong setae.

Pleopod 1 with almost square peduncle; rami shorter than peduncle, overlapping; endopod with 7 long distal apical plumose setae; exopod broader, with 16 apical and lateral plumose setae plus 1 simple seta at mediobasal corner. Pleopod 2 peduncle wider than long; rami similar to those of pleopod except simple exopodal seta absent. Pleopod 3 similar to pleopod 2 except exopod 2-articulate. Pleopods 4 and 5 similar; exopod 2-articulate, each article with 1 or 2 simple short setae.

Uropodal peduncles interlocking with a catch anteriorly, with row of obscure rugae, and with mesiodistal plumose seta; endopod triangular, apically rounded; exopod narrow, parallel-sided, with 5 plumose setae on oblique terminal margin.

Colour in alcohol white.



Figure 3. *Stegidotea latipoda*, holotype. Scale line = 1 mm.

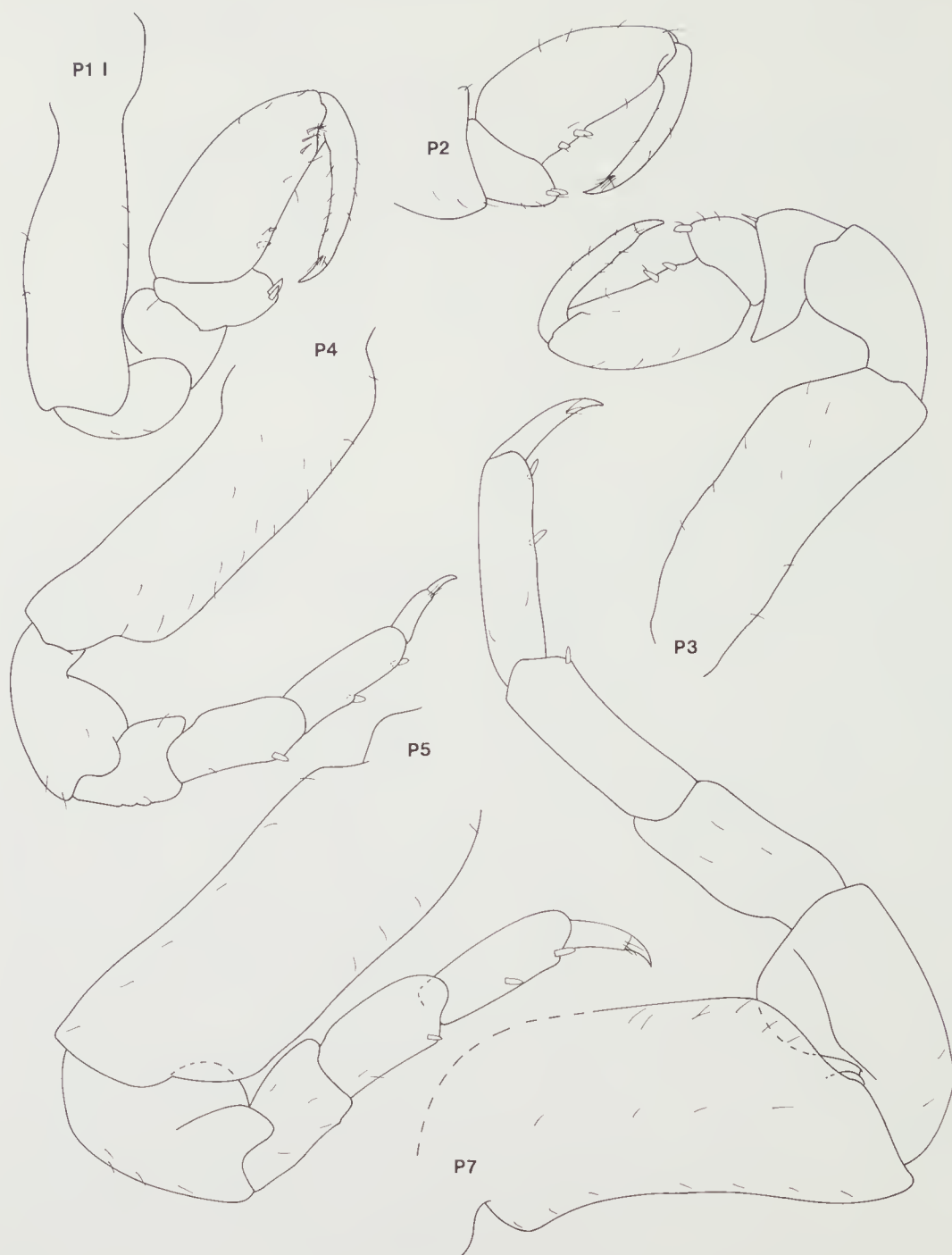


Figure 4. *Stegidotea latipoda*, holotype. P1, P2, P3, P4, P5, P7. pereopods 1, 2 (part), 3, 4, 5, 7.

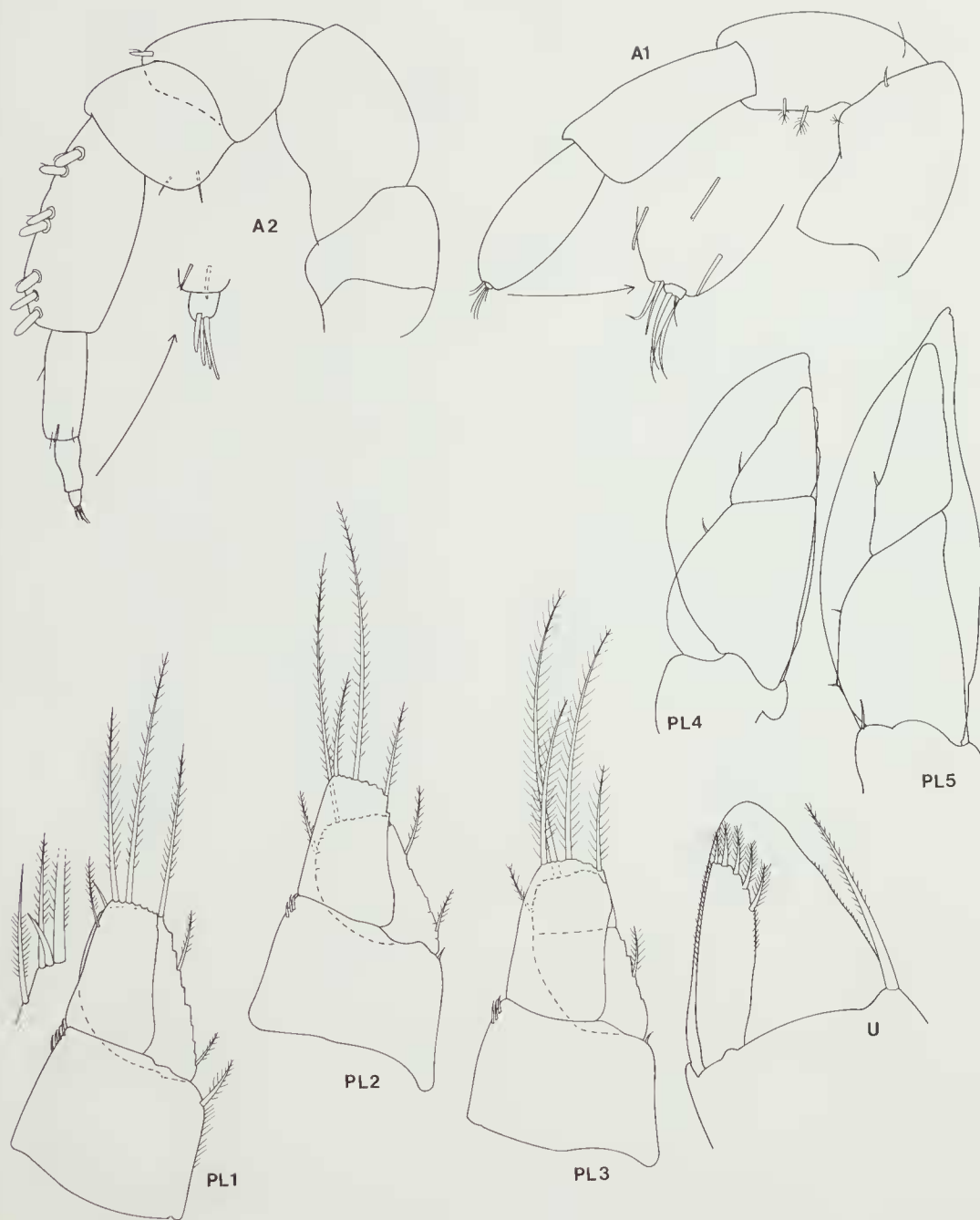


Figure 5. *Stegidotea latipoda*, holotype. A1, A2, antennae 1 and 2; PL1-PL5, pleopods 1-5; U, uropodal rami.



Figure 6. *Stegolepis latipes*, holotype. MDl, MDr, left and right mandibles with detail, MXl, maxilla 1, MX2, maxilla 2 with lobes in detail, MP, maxilliped, MPe, maxillipedal endite, anterior

Etymology. The specific name alludes to the broad bases of the posterior pereopods.

Distribution. North-western Australian shelf, 78 m. (type locality only).

Remarks. There are several differences between this species and the two others previously known. In *S. latipoda* pleonite 1 is only slightly narrower than the rest and pleonites 1–3 are completely delimited dorsally from each other and from the pleotelson. In *S. pinnata* Poore and *S. scabra* Poore pleonite 1 is free but not visible laterally, pleonite 2 is completely free, and pleonites 3 and 4 are free only laterally.

The molar of *S. latipoda* is an untoothed boss (it is fully toothed and setose in the other two species; the difference is not sex-dependant). Articles 2 and 3 of the maxillipedal palp are fused (separated by a suture in the original species) and the maxillipedal endite lacks a coupling hook (present in *S. pinnata* and *S. scabra*). In general shape the mouthparts of all three species are similar.

Pleopod 1 of *S. latipoda* is very different. The two rami are simple, broad and overlap. In *S. pinnata* and *S. scabra* the rami are narrow and do not overlap and the exopod bears "stridulatory" ridges.

As well as these characters and its general habitus the species is notable for the extreme

width of the bases of pereopods 5–7 which overlap anterior to the uropodal cavity as if to extend it forward to the middle of the pereon.

Stegidotea latipoda is known from a single specimen from a midshelf depth on the North-west shelf of Australia. Its congener, *S. pinnata*, occurs at shallower depth, 42 m, on the same shelf but is more common in Bass Strait and the south-eastern Australian shelf between 47 and 204 m. *S. scabra* has been found only in Bass Strait at 55–95 m.

References

- Poore, G.C.B., 1984. Clarification of the monotypic genera *Chiriscus* and *Symmius* (Crustacea: Isopoda: Idoteidae). *Proceedings of the Biological Society of Washington* 97: 71–77.
- Poore, G.C.B., 1985a. *Basserolis kimblae*, a new genus and species of isopod (Crustacea) from Australia. *Journal of Crustacean Biology* 5: 175–181.
- Poore, G.C.B., 1985b. Australian chaetiliids (Crustacea: Isopoda: Valvifera): a new genus, new species and remarks on the family. *Memoirs of the Museum of Victoria* 46: 153–171, pl. 34.
- Note added in press:* In a paper in preparation for *Mémoires du Muséum National d'Histoire Naturelle, Paris*, three additional species of *Stegidotea* from deeper waters near New Caledonia are described.